DEVOTED TO NAVIGATION, COMMERCE, ENGINEERING AND SCIENCE.

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AROUND THE LAKES.

CLEVELAND, OHIO.

Captain Carlton Graves, last season sailing the schooner Columbia, has bought a half interest in the steambarge Benton, for $9,000.

Captain A. B. Drake and Joseph Oldham naval architect and late veritas inspector, left on a tour of inspection for Lorain on the 26th instant.

Simon Langell, shipbuilder, of St. Clair, Mich., when he comes to Cleveland is always looking after something good. He is now in the city, stopping at the American house.

We have received an electrotype of a fore and aft compound engine, 27 and 50 by 46, from the Phœnix Iron Works, Port Huron Mich., which will be shown in our next issue. The above enterprising and extensive firm are well known for their excellent and thorough workmanship.

Captain H. D. Root, shipbuilder of Lorain, was in the city Tuesday. He reports building good, and is now at work on a fishing tug, which will be offered for sale. It is well known that Mr. Root is one of the best builders of fishing tugs on the lakes, and we expect to see something fine turned out in this instance.

Captain Glass, of Marine City, has purchased the schooner Republic from J. H. Wade, of Cleveland, for $5,000. She will, in the future, hail from Marine City, and will be commanded by her owner, who last season sailed the schooner Thomas Gawn. The Republic will probablay trade this season between Saginaw and Canada.

Captain Ira B. Mansfield, last year master of the steamer Christie, was in the city on Tuesday. We see by the Capaain's card that he is an accredit ble member of Woodland lodge, Knights of Pythias. The Captain has been promoted to the command of the new steamer, and Captain Charles Swartwood will take his place on the Christie.

Captain E. K. Porter, who last year was in command of the Sheldon, is now without a boat, inasmuch as the Sheldon has been sold to other people. It is well known that Captain Porter is one of the best of our lake mariners, and withal a good business man: any one desiring such a genius can get full recommendation for him from H. J. Webb, shipbroker, Cleveland, Ohio.

Charles Champness, boatbuilder, has taken contract to build a centre board, yacht dimensions, 32 feet in length, 9 feet 6 inches beam, and 4 feet deep for Kingsborough and others of this city. Mr. Champness will also build two 22 feet yawl boats, and two 20 feet in length for the new steamers building at the yards of the Cleveland ship building company, and two boats for R. R. Rhodes' new steamer. Dimensions 20 and 22 feet in length respectively.

The Globe Iron Works company are as brisk as usual in each of their extensive departments. At their shipyard the Wilbur boat is getting well along and she will be all ready to launch in March. The plating is on the Second Lehigh company's boat, and steady work is being done on her day by day. The boat building for Brown and others is all in frame, and the plating is well along. The keel is laid for the Owen boat, and it is safe to say that she will be completed according to the terms of the contract.

Mr. V. D. Nickerson, marine artist, has just returned from a tour around the head of Lake Superior. He speaks highly of the future prospects of Duluth, West Superior and Superior City, and informs us that several large solid buildings, structures that any city would feel proud of, are being erected in Duluth, and it is confidently expected that Duluth will handle a larger quantity of grain this season than ever before. Captain McDougall is busy superintending his new steambarge, having gangs of men constantly at work on her. Besides the artistic talent, Mr. Nickerson has considerable of the element which goes to make a sailor, having put in thirteen years on fresh and salt water.

Mr. DeWolf, the late local inspector of hulls for this district, has resigned, and his successor has been appointed, who, it seems, is going on wtth the appointed work in a ship shape manner.

Captain Clint Ennis, the genial master from far back, is showing a great genius in artistic painting in water colors and pastel. Several of his works of art, all marine scenes, can be found on exhibition at 129 Superior street.

Captain Edward Hewitt has returned from Detroit, where he had been called to give evi dence in a case of damages arising from raft towing in the St. Clair river. We understand that the lumber company has recieved judgment in their favor, although the full particulars of the case are not yet to hand. It appears however, that this special raft was 400 feet broad, and Captain Hewitt is loud in his denunciation of anything so montrous being permitted to occupy, and obstruct the narrower paths of navigation, and says that the greatest width of a raft ought to be limited to 100 feet, and in length not greater than that of a moderate tow.

The Cleveland Shipbuilding company are busy on the two new boats building for the Cleveland Iron Mining company; number 4, is well along, having her spar deck nearly all laid, and the joiner work commenced. Sheer legs have been erected on her deck to take in the heavy machinery, the main tackle being a large three fold purchase. Work on number 5 boat is being pushed rapidly along with extra hands, and no time will be lost in completing this contract. The company are also putting two new cylinders in the steam barge V. H. Ketcham, and after her new boilers are taken in, they will erect an iron boiler house. The sheer legs mentioned above were lashed, fitted, and erected by a skilled employe of the firm, who is an adept at this particular kind of work.

The Standard oil company is about to construct a big steel boat for trans-continental work. Mr John F. Pankhurst of the Globe Iron works company has returned to this city from New York, where he had been nogotiating for the job of building the boat and were it not for the difficulty of getting a craft of the size desired through the canals it is probable that she would be built here. Other work of the kind is still contemplated and the Cleveland firms have specifications upon which they will give figures. The steamer which the Standard is about to build is probably the first of a fleet of its kind which will engage in carrying oil in bulk across the Atlantic. The new boat is to be 240 feet keel, 36 feet beam and 16½ feet hold, with a capacity of 500,000 gallons. Her construction will be adapted to the business in which she is to engage. Five large tanks will be placed in line from stem to stern with capacity and build regulated to give the boat a seaworthy trim. This boat is too large to pass through the locks of the canals from the lakes to the coast and this is the only obstacle in the way of the work coming to a Cleveland shipyard. Other crafts for transporting oil in bulk along the American coast are also to be built for the Standard and with these the canal locks will not cut so much of a figure. The encroachment of other oils into the territory controlled by the American producers has lead the Standard to this means of cheap transportation and the opinion here is that a large fleet of vessels will be constructed for the trade. There is little danger of fire with a boat composed almost entirely of iron and steel. The fact that the iron shipyards of the lakes have been close competitors for the work is singular, and is also a marked illustration of the growth of iron shipbuilding on the lakes. Only a short time ago, when the building boom attracted attention, the managers of eastern shipyards talked of constructing lake carriers and shipping them here in parts by rail and putting them together on arrival. There is no reason, however, why iron boats cannot be built here as cheap as at any other place in this country, and the investment of a large amount of capital in the industry of late has demonstrated the truth of this statement.

The Sumatra is in the Cleveland dry dock for a thorough caulking, and with the new boat being built by this company the ground presents a scene of unusual activity.

Mr. O. E. Lehndorff, agent for Hodges Brothers, Detroit, lubricator company, is in the city on business for the firm among Cleveland vessel men and engineers.

Captain Thomas Wilson, who has been sojourning in Florida with his family during the past few weeks, will probably return home towards the latter part of next week.

Meteorological summ ry for the week ending Feb uary 26, 1889:

Mean barometer	30.56
Mean temperature	16.5
Mean humidity	6.8
Total precipitation	.24
Prevailing direction of wind	South
Total wind movement, miles	1769
Averag cloudiness	3.5
Average state of weather	C'dy
Max. temperature, (highest)	43 8
Min. temperature, (lowes)	—6.7

— Below zero.

W. H. HARMON, Sergeant Signal Corps.

Captain William Mack, who has sailed some of the best boats on the lakes, including the Republic, Roumania, Auroria, and the one which he now owns, in all of which the Providence windlasses and capstans have been used, says there is no better machine built in any country than that manufactured by the American Ship Windlass company, of Providence, R. I. We take pleasure in printing this testimony emanating from a master of such large and varied experience.

We were today made acquainted with the new incumbent of the hull inspector, under appointment of the supervising inspectors, and hold that he is a man positive and efficient in the business. As regards civil service reform we know nothing about them, for the reason that there are so many nooks and crannies, but from the way he questions candidates for licences we are willing to say that no better man could be inducted into office. It has been said that "to the victor belongs the spoils," but as regards steamboats and sailing vessels we want no spoils unless it be demurrage due to those who have done heroic work.

The new boat in course of construction at the Cleveland Dry Dock company's ship yards, is getting well along; the ceiling and shelf piece, for the 'tween deck beams, are finished, and half of the beams are in place; the floor ceiling is 11 inch oak, in the round of the bilges 10 inches, and 6 inches oak lining, all finished up to the shelf piece. Heavy hanging knees will be through-bolted to support the 'tween deck beams, and the bottom of the midship stanchions will set between the rider keelsons, and through bolted. The bottom outside planking is nearly on, the garboard strake being 7 inch oak, next plank 6 inch, and the remainer 5 inch. We might here remark that Mr. Johnson will have a good strong boat, and we also believe she will be found capable of reflecting credit and honor on the gentleman whose name she is intended to bear, viz: George H. Presley.

Captain M. B. Gary is hustling around among vessel owners, agents, and brokers, for signatures to a petition to be laid before the president of the United States, endorsing him as a fit and competent person for the office of collector of this port. As a marine organ we cannot advocate the claims made by this gentleman, and think that a more suitable and proper person from, or connected with the shipping interests and commerce of the port ought to take a position as a candidate for this important office. However honorable Captain M. B. Gary's war record may have been, there is no reason in his laying claim to a position as candidate for an office which we feel positive could be filled to much better satisfaction by a man less versed in legal lore. Although we do not place any weight on a petition signed simply out of courtesy, or in a moment of impatience, and by gentlemen personally unknown to the executive authority, yet it may be considered only ordinary prudence to guard against efforts which are to the detriment of the interest of the marine community.

Mr. McGraw, local inspector of steamboats, than whom none have been better, still remains in office and is busy every day during these slow times asking questions of engineers who desire licences. We have no hesitation in saying that Messrs. McGraw and DeWolf have been among the most efficient inspectors that this district has ever been blest with, and if the successors they have will be equal in efficiency in their knowledge of hulls and boilers to the incumbents in the office of the four years just past, we believe that the work of the local inspector's office can not be found fault with.

DETROIT, MICH.

The fleet of A. A. Parker of Detroit will be offered as follows: Steamer Minneapolis, Captain John J. Hutton; Anna Smith, Captain Tim Lemay; B. W. Blanchard, Captain H. W. Bogart; Saginaw, Captain Thomas Hayes; schooner Redwing, Captain E. Lohr; Mont Blanc, Captain R. W. Jones. Captain J. W. Millen has made the following appointments: Steamer Iron King, Captain P. L. Millen; Iron Chief, Captain George Miner; Iron Duke, Captain William Millen; Iron Age, Captain Norman; schooner Iron Queen, Captain Fuller; Iron State, Captain George Dennis; Iron Cliff, Captain William Irvine; Iron City, Captain W. M. Scott.

The steamers of the Lake Michigan & Lake Superior Transportation company are to be commanded as follows: City of Duluth, Captain Lawrence Green; Peerless, Captain H. C. Page; City of Traverse, Captain J. M. Twitchell; Jay Gould, Captain Donald McLean; J. L. Hurd, Captain M. H. Tineron; City of Fremont, Captain James Sullivan. No master has yet been named for the Bessemer. Captain Lyman Hunt of Buffalo, who for many years sailed the City of Dulvth, will retire, it is said. The steward of the City of Fremont is Charles McBean of this port. James Hunt is clerk of the City of Duluth.

Hugh A. Mallon, marine clerk at Buffalo, has been recruiting at Mt. Clemens, Mich., for some time past, bathing, it may be. He is practising for a part in some tank drama.

H. C. Beeson, marine clerk at Detroit, has just returned from a ten days' sojourn in the windy city (Chicago). The book stores there and at Detroit are ablaze with little gilt framed glass signs, notifying an unsuspecting public that Beeson's Sailors' Hand Book will be out March 20th, 1889. IXION.

MARINE CITY, MICH.

The older residents of this city know that a number of years ago C. C. Blodgett, of Detroit, owned the property on which Lester's shipyard (and what has lately been the T. & S. T. shipyard) was situated, but of late years it has come to be commonly understood that the T. & S. T. company had purchased the property. Such, however, is now proven not to have been the case, as within the past few days Captain William B. Morley has purchased the property of C. C. Blodgett. Just what effect this move will have upon the future operations of Messrs. Curtis & Brainard, who succeed the T. & S. T. company, remains to be told, but they will certainly operate the yard during the coming summer, completing the steamer which they now have on the stocks. Captain Morley informs us that at present he has no particular use for this property, but we think it safe to venture the prediction that he will find some use to which he can put it, after Messrs. Curtis & Brainard get their boat off the stocks.

Captain Simon Langell has gone to Cleveland on business.

LORAIN, OHIO.

Mr. H. D. Root is building a large harbor tug, 85 feet in length, 19 feet beam, 10 feet 6 inches depth of hold, engine 24 by 26, building by Thomas Manning Jr. & Co. D. Bonnell is building the boiler, which is to be 7 feet in diameter, and 16 feet long. Mr. Root is also rebuilding, at his yard, the tug Selah Chamberlain, at a cost of $1,200, and raising the Albert Y. Gowen seven feet, and putting a new deck on her. She will now be fitted to carry lime, and will ply in that trade during the coming season.

WEST BAY CITY, MICH.

Special to the Marine Record.

Captain James Davidson commenced the construction of a new fire tug on February 21st, for Captain Richard Armstrong, to be used on the Saginaw river. She will be 66 feet in length, 16 feet beam, 7 feet depth of hold. She will be of the latest design, having all the modern improvements known in fire tug service. She will throw ten streams, and will be equal to any two fire tugs now on Saginaw river. She will be appropriately named the Geyser.

The steambarge George W. Roby is very nearly completed in F. W. Wheeler's ship yard. She is owned by George W. Roby of Detroit, L. C. Waldo of Ludington, and Captain Dudleson. The cost will be about $125,000. She will run between Lake Superior and Buffalo.

The steamer Arundel is receiving a complete overhauling in the shape of new guards, new beams, and new main deck, and with a new dress of paint, she will be in a No. 1 trim for the coming season.

The tug Louise is receiving new timber heads fore and aft, and new towidg bitts, bulwarks and fender strakes.

With the opening of navigation the Saginaw river will send out a fleet of 18 new steamers, fourteen from Wheeler's yards, and four from Captain Davidson's, with several others to follow later in the season.

The weather here of late has been very cold, the thermometor traveling as low as 17 below zero. The ice on the river is from 12 to 14 inches thick, and there is an over abundance of snow, it being from three to four feet deep in the pineries.

For the season of 1888 Mr. F. W. Wheeler,

Paid his employes	$314,927
Paid for timber	290,619
Paid for engines and boilers	224,450
Paid for iron etc	85,000
Paid for rigging and furniture	60,000
Total	$974,996.

BUFFALO, N. Y.

Special to the Marine Record.

The Buffalo shipyards are now at work on three large steamers and two or three tugs. A fourth steamer will probably be started before navigation opens.

The disposition to go slow in fixing freight rates is shared by shippers and vessel owners, not, of course, on account of indifference, for each is anxious to see a rate fixed favorable to his side of the business, but because they are not able to agree. The late improvement in the iron market makes vessel men confident of carrying their point.

Captain James Hannett has gone to Duluth and will sail the tug Williams there next season.

An unusually large amount of coal is being stocked here. A coal shipper thinks that there is quite near 300,000 tons already laid down.

The publisished appointments to Captain Maytham's line of vessels are pronounced neither authorized nor correct. The only appointment he has made public is that of Captain Thomas Doyle to the tug Maytham. His two new tugs are getting along well and will be ready for next season's work.

Charles H. Lane, and daughter, Miss Fannie B. Lane, have gone to Cuba for the winter, on account of Miss Fannie's health.

The Sawyer lumber company of Tonawanda has leased 700 feet of dock front on the Tift farm canal, and will give up its business at Tonawanda. They expect to handle about 40,000,000 feet the coming season. This is an important move. Buffalo has marked advantages for receiving lumber by lake and shipping it by rail, to Tonawanda, and its facilities for canal movement are as good. There is reason why more of the Tonawanda lumber handlers should come to Buffalo.

Captain James Davidson's towbarge, which is to go behind one of the Menominee Mining Co's steamers, has been chartered for the season to carry iron ore from Escanaba to Ohio ports at $1.10.

[CONCLUDED ON FIFTH PAGE].

THE CHALK AGE OF MECHANICAL ENGINEERING.

BY J. F. HOLLOWAY, OF NEW YORK CITY.

It was said of a celebrated temperance lecturer, that his success was largely due to the fact that in his travels about the country, he had with him a man whose whole life had been spent in the indulgence of habits just the reverse of those he advocated, and who, by thus doing the things he ought not to have done, and leaving undone the things he ought to have done, became to be, and indeed was exhibited as a frightful example. I speak to those to-day whose good fortune it is to have been born at a time when it is possible to avail themselves of the advantages of college education, of study in technical institutes, and of practice in schools of manuel training. In addition to the aid of teachers, the surroundings of libraries, laboratories and workshops; you have the privilige of listening to lectures given by cultured men renowned in science and art.

As a background to this bright scene, it was needed that there should come before you one who, never having had any of these opportunities, one who wanting in those graces and accomplishments that come or should come from a collegiate training, and who should be in fact, a frightful example, of those whose knowledge at best is more of practical than of the theoretical kind.

Now, do not let us start out with a misunderstanding between us. Do not for a moment believe that I undervalue education, be it acquired where or how it may be. I have all my life felt the need of it, and have always known how much it would have helped me, had I been priviliged, as you are, to find in such surroundings such valuable aid as you must. And yet, are there not some compensations which serve to even up all our lives? The dweller amid the hills, whose rough pathway lies onward and upward, ever surrounded by difficulties and dangers, as he climbs and toils, he is by a beneficient Creator endowed with a will to dare and with a strength to accomplish that which a dweller on the plain has no need for, and does not possess.

It is said there is no royal road to learning, and perhaps there never will be one, but the road over which the young man desiring to become an engineer travels to-day is a far plainer and easier one than the one over which his predecessors struggled and stumbled.

It has been well said of the present age that, so far as it concerns engineering, at least, it might well be called the "blue print age."

The age of which I speak might equally well be called the "chalk age." In other words, it will be my mission at this time to speak to you of the old time millwright, machinist, and engineer as I remember them at the time when I first began to learn something of the art of working iron. I trust the picture I may present will not be without interest and some benefit to you. It will be the picture of a gone by age, a picture of scenes you will never look upon except in imagination.

As I have walked through your well appointed workshops, your well lighted and convenient drawing rooms, have looked into your well supplied libraries and labratory, have listened to the instruction given by teachers and lecturers, each skilled in some particular science or process, there has come back to me the memory as to what were the surroundings, what the opportunities, of young men who, starting at the time of which I have spoken of, had the same aims and ambitions as have the young men before me now. We will lay the scene I am to describe in some remote inland village, beside some rapid running stream whose swift waters afford the power used for turning wheels, which as yet had not been harnessed to the then newly talked of, but as yet not much used, steam engine.

Our hero will be a country boy who early began to show signs of ingenuity and a taste for mechanical pursuits. As usual, his first attempt in engineering begins in whittling a pine windmill, which is tacked on the ridge pole of his father,s barn, where it serves to show not only the direction of the wind and its force, but as well the bent of his thoughts and desires.

Next we find that he has built across the brook that flows near by a dam, whose pent-up waters turn the wheels he has built in imitation of those he has so often watched at the saw mill.

Later on, a rudely built pump, actuated by the water wheel, adds a new triumph to his skill, as it flings its tiny stream up into the sunlight.

This may seem a crude and unpropitious beginning in the study of so grand a science as is engineering, but I venture to say there are eminent engineers living whose well planned and ponderous engines are the admiration of all who behold them, who, in the well earned success of their later years find no such joy as came to them long ago, when, as barefooted boys, sitting in the sunshine of early spring, on the side of the brook, nursing their knees under their chin, they watched with throbbing heart their little wheels go round, and planned and yearned for further and greater triumph. Borrowing of the carpenter an auger and a drawing knife, and finding in the woodshed a hatchet and a saw, in winter he makes his own sleds, in summer his wagons; and while their design may be faulty, their workmanship rough, the ingenuity shown by which unsuited things are made to perform needed results shows a study of the situation truly commendable.

Sandwiched into the years as they go by are more or less of school days, in which the branches of a common school education are learned. In the course of time there came to be held a family council, the subject of which is our boy; and where, in spite of what may have been the hopes, desires, and ambitions of the other members of the family concerning him, all agree that it will be useless to try to make of him a doctor, lawyer, merchant, or minister, as he is evidently bound to be a machinist and an engineer. So plans are made by which he is to have a place as an apprentice in the only foundry and machine shop the village affords. Having heard something of the steam engine, and having read of its having been used to drive mills and boats, our hero dreams of the time coming when he can handle a steam engine, to start and stop it at will.

To the poet there come dreams of some fair Arcadia, some paradise regained, some spot where glowing colors greet the enraptured sight, where the fragrance of flowers loads the air with perfume, and where sweet melodies charm the listener into raptures of repose. The navigator has in his mind's eye undiscovered isles whose beauty and solitude woo him onward. The adventurous miner, worn and weary, lies himself down to sleep amid the rugged canons of the far west, and in his dreams there opens in the ragged and seamed rocks that tower above him hidden veins of untold treasure; but to the boy of long ago, who worked, and wished to be an engineer, there came no dreams more delightful, no hopes more pleasing, than of that day when he should hold beneath his grasp to start, to check, or to command some ponderous engine ot grand machine. Deem it not idle to thus dream, and hope, and speculate on the future, for had not our hero had some such visions to cheer him on, he would oft have been far more discouraged than he was, as he stumbled and tripped along the rough road he had chosen to walk in. We next find him at the open door of the village foundry, where he is met by the boss, who, taking him into a little den behind the cupola, gives him a stump of a broken file, and shows him how to rub off the sand from the newly made castings. To his kit of tools there soon is added a lump of a hammer and a stump of a chisel. With these he is further taught how to chip off the bunches and ragged edges the unskillful moulder has made, and the runners and gates he had left on. To those who have done this or the first time, I need not say that many, far too many of the lumpy hammer blows missed the stumpy chisel, but did not miss the tender hand that held it. It was at such times tha the self-inflicted blows, added to the cheerless surroundings, made our apprentice boy to almost wish that he had chosen to be a minister instead; but a glimpse, even through tears, of that glorious vision of the future made him or clinch his teeth together, wrap a rag around the bruised and bleeding hand and try it again. After awhile some kind hearted journeyman, seeing his bleeding hand and remembering his own beginning, tells him to go up in the pattern shop and put some shellac varnish on it, which he does and afterward goes about with a feeling that if he has not yet learned the trade, he has at most learned a new wrinkle. After awhile he is promoted to help wheel scrap and pig iron up the runway to the charging floor of the cupola; and on days when the heat promises to be extra heavy, he helps the melter charge the coke and iron into the cupola and to chalk their weight on the tally board above the scales as they go in.

[CONTINUED ON SIXTH PAGE.]

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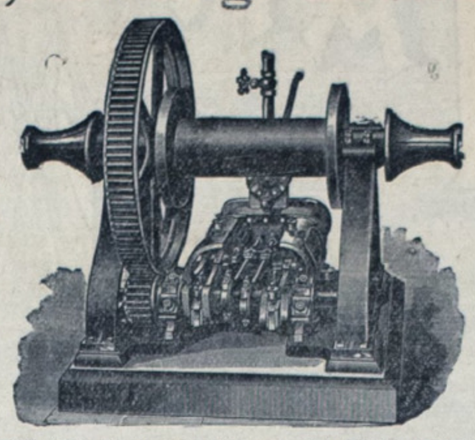
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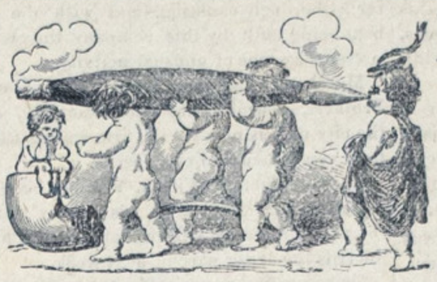
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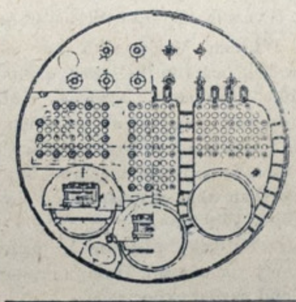
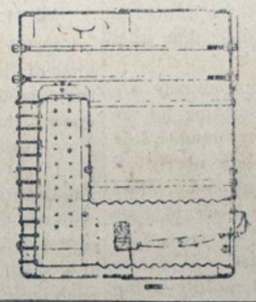
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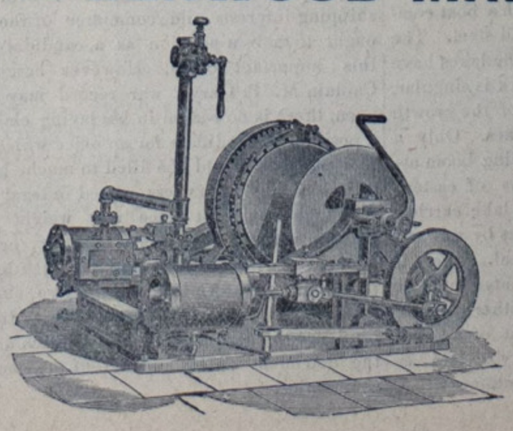
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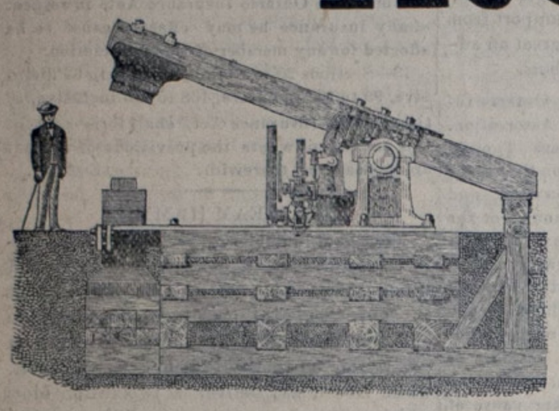

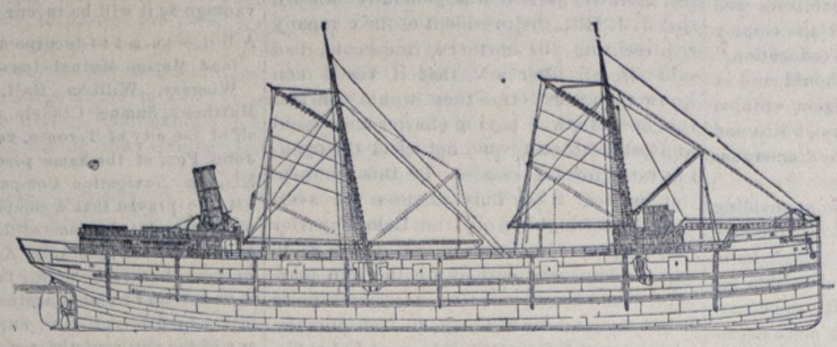

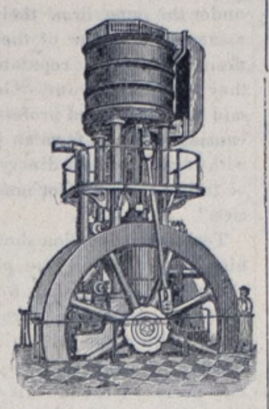

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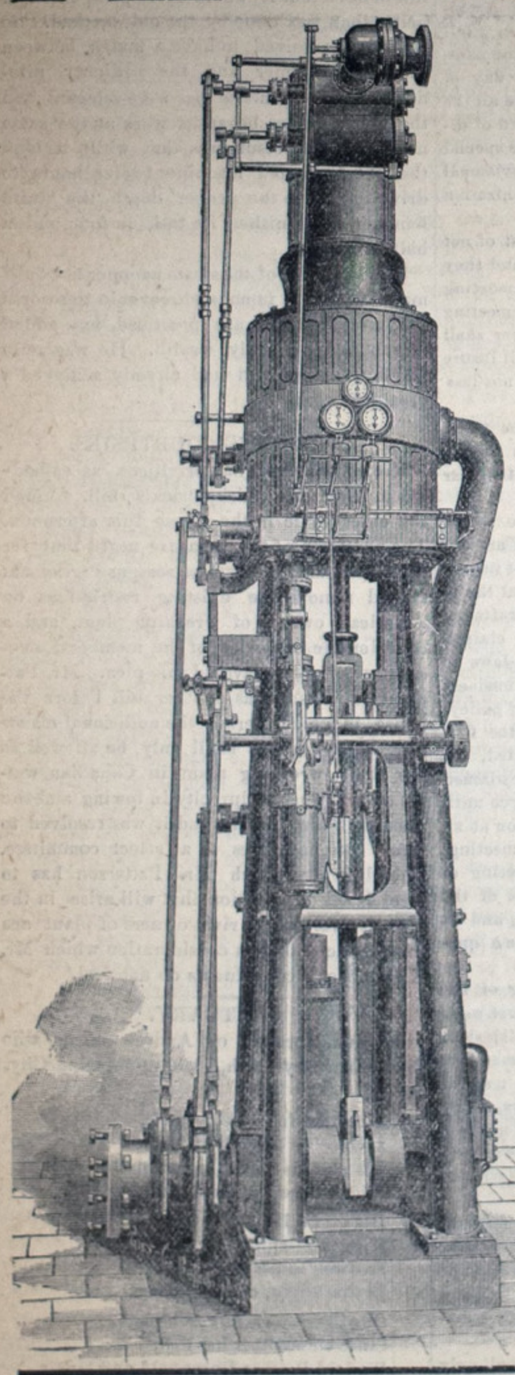

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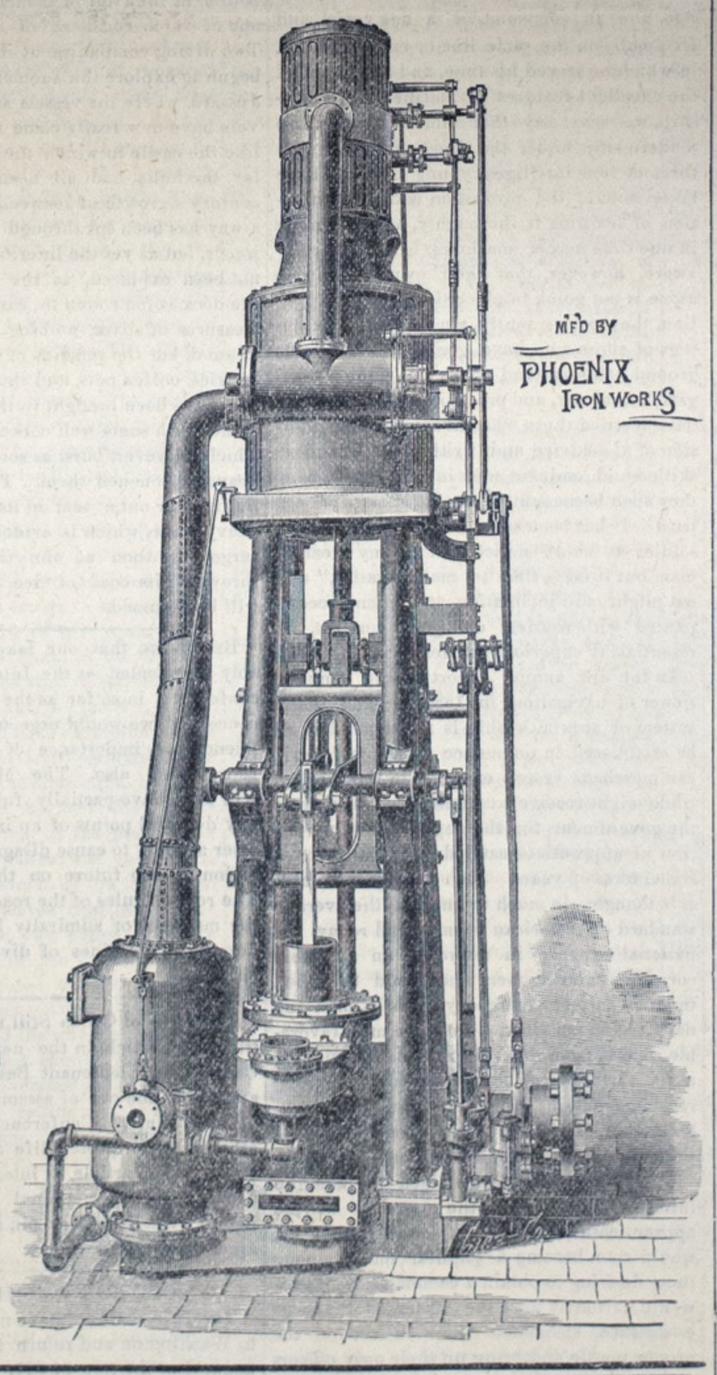

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Marine Record.

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MARINE RECORD—OFFICIAL PAPER.

APPRENTICE SYSTEM.

Now that our inland marine is assuming gigantic proportions, under the able management of a qualified and experienced class of men, we think the time has arrived when a regularly organized system of apprentices would tend to increase the efficiency and elevate the standing of the future service. It may in a manner be generally understood that the craft or skill of seamanship does not require a thorough and special training; but the contrary is the fact, and the youth enjoying these advantages would be more competent at the expiration of a few years than one who was allowed to gather his knowledge variously, and from perhaps questionable authority, thus requiring fully double the service to assure himself from practical experience that the theory, as laid down by the past experience of others, was correct. A respectable, intelligent youth joining a vessel with the understanding that he had embraced sailing as a distinct profession, would, no doubt, yearn to become a proficient in the work and craft of seamanship, and it would be the duty of his employers to see that the lad had opportunities given to him to learn how to control a vessel. Under the head of causes of collision alone may be mentioned the seemingly permanent neglect or misapprehension of the steering and sailing rules, bad lookout, foggy or thick weather, error of judgment, neglecting to show lights, parting cables, dragging anchors, want of seamanship, anchoring in foul berth, and various other causes which the apprentice would require to be taught for the preservation of his employer's property. The youth so appointed by any of our large shipowning firms would enjoy singularly fortunate advantages; for while the season of navigation, including the fitting out and laying up of their vessels, would probably occupy eight months of the twelve, the other four months could be profitably spent in acquiring a theoretical knowledge of their business by attending a progressive series of studies at a navigation academy, where they might learn chart exercises, the use and adjustments of the sextant, and other measures, work amplitudes, and azimuths, compute the variation and be conversant with the laws of deviation, the theory of the law of storms, nautical astronomy, and other kindred subjects, besides learning what probably would be considered more practical, a knowledge of masting, erecting shears, to cut and fit rigging, draft and cut sails, to moor and unmoor, and to keep a clear anchor by the methods in use for tending ship at single anchor, and to understand the nature of invoices, charter party, bottomry, and the various points that constitute a maritime lien. Even allowing that after four years' study the apprentice had grasped the substance of the above, he would be a valuable servant to the shipowner, besides having fulfilled the ordinary duties of one of the crew during that period. In this way apprentices might serve their time, become officers, and take command under the same firm, their length of service assuring the owner of their capabilities and desire to earn a reputation in the employ they were trained in. "General education," said a distinguished professor, "should aim at causing a man to form an intelligent opinion with regard to the ordinary affairs of life, and be full of resources for meeting new emergencies."

Technical education should aim at enabling him to understand the process and the machinery of the special work in which he is engaged. Indeed, a thorough education, together with a special training for some particular employment, is becoming more necessary every year, and this we hold is equally true afloat as well as ashore. The rapid and increasing growth of steam navigation calls for an entirely different class of men to what were employed on the sailing craft only a few years ago, and to meet this requirement a class of intelligent young men, who had served several seasons in the steamers, would naturally be, if not the most competent, at least excellent material to qualify under proper instructions and guidance for the more responsible position on board a vessel; and while competency in their profession can not be attained except through the first few years of comparative drudgery and hardship, yet this trying period would be made lighter and less irksome when the apprentices had the knowledge that in a few years they might, by a strict attention to their owners' interests and their own skill and good conduct, be qualified to command a steamer themselves.

On looking back over the years gone by, we find that the boys on the small coasting vessels made the masters of the East India and China clippers afterwards. So also in the English mercantile marine we may find the youth, who was an apprentice but a few years ago, now in command of a fine vessel, and frequently in the same line or employ as that in which he served his time, and as a proof of the excellent features af marine apprenticeship, we may say that almost every large modern ship under the English flag carries three or four intelligent young men who have taken hold of the profession with the intention of learning it thoroughly, and becoming in due time master mariners; being perfectly aware, however, that their own experience alone is not going to place them in this position, they consequently study up the teachings of those who have gone over the same ground before, attend when on shore a navigation academy, and practising what they may have learned there when at sea, with the addition of the advice and writings of the most skilled and eminent men in the profession, they soon become fitted to fill a position of trust. It has been said that "you can make a soldier at short notice out of any healthy man, but it takes time to make a sailor," and we might add inclination and talent, accompanied with sobriety and good conduct, are essentials if superiority is desired.

In the first annual report of the commissioner of navigation, in 1884, we find that a system of apprenticeship is recommended to be stabliseed in pursuance of which American merchant vessels engaged in the foreign trade might receive a certain fixed sum from the government for the support and instruction of apprentices carried on board for a stated term of years. Such a system would, it is thought, do much to improve the average standard of American seamen and repay the national expense in affording an available corps of seafaring men who could be relied upon in case of emergency to help man the navy. Yet, notwithstanding the most favorable reports from the shipping commissioners at the various large coast ports and the strong recommendations from our foreign consuls, no farther steps have been taken in this important matter, and it would seem as if private enterprise would be obliged to take the initiative in organizing the system of marine apprenticeship, which, if once established, would soon become a popular mode among those desiring to obtain a command; hence, we would earnestly urge the owners of the large estsblished steamboat lines to secure the proper mettle and bring up their own officers and masters, resting assured that as the sailor is always loyal to his flag, so also would these lads be found zealous and trusty servants to the ship, to the master, and to the owners he sailed under.

Chicago has 463,000 bushels of corn afloat. There are two or three cargoes of wheat at Port Huron, but nothing has been reported at Detroit.

THE recent splurge of the Northern line boats in iron ore charters has dwindled from 125,000 tons to a paltry 25,000, and this in the light of an accommodation charter for these vessels. We were dubious for a length of time that the true inwardness of this deal had not been given publicity, and we are now pleased to assure our readers that the figures quoted, viz. $1.25 on the above charters form no basis for the opening rat soffrieght this season. It shippers are firm, vessel owners require to be firm also, and see that they come out on the right side of their ledgers after an anxious and energetic season. Where large capital is involved, a deal made so early in the season might possibly have had a baneful effect, yet we are pleased to see that such has not been the case, and owners would po sibly feel more at ease if it was generally known that J. J. Hill, the president of the company representing the northern line boats, had said in an interview, that if vessel men knew the exact terms they would consider that he had a well paying charter and would understand that it could not effect the opening rates for the season. In this connection we feel it our duty to quote the average rate of freight on ore from Lake Superior to Ohio ports last season as being $1.46 and the improved outlook in the iron markets would argue a better rate, and more brisk demand for tonnage, to transport the larger output from the mines of Lake Superior this season.

WHERE a part of the owners employ the ship, while the remaining owners decline to unite in the employment, those employing her and stipulating bear all the expenses of outfits and risks, and are entitled to all the profits of the voyage; for, as the owners refusing to unite are protected by the stipulation from loss, they are regarded as not entitled to anything for freight earned by the ship or her decline in value by wear and tear. According to the maritime law of the continent of Europe, if the owners of a ship disagree among themselves as to her employment, a court of admiralty will, upon an application of the parties, decree a sale of the ship for the benefit of all the owners. A similar rule has been followed in the courts of admiralty in the United States. A court will not compel one owner to buy out another's interest, he may sell the whole ship and divide the interests of the different owners.

The Pall Mall Gazette reports a strange tale of the sea from the Baltic. More than a hundred years ago two vessels went to the bottom of the Gulf of Finland, the cargo of one of which consisted of glittering silver. Two diving companies at Revel have lately begun to explore the submarine regions near Jussaro, where the vessels sank, and the divers have now really come upon them. But, like the castle in which the Sleeping Beauty lay, the hulls had all been overgrown by a century's growth of seaweeds and tang. Now a way has been cut through this wet wall of weeds, but as yet the interior of the vessel has not been explored, as the divers fear that the deck is too rotten to carry them. Of the treasures of silver nothing has so far come to hand, but the remains of apples, cucumbers, buckles, coffee pots, and shoes with pointed toes have been brought to the light of day, together with some well corked bottles, all of which, however, burst as soon as the "air of heaven" touched them. The second vessel lies further out at sea; on its deck lies a great heavy stone, which is evidently part of the cargo. As soon as the Gulf of Findland throws off its coat of ice the investigation will be resumed.

BELIEVING that our lake district will be ably represented at the International marine conference, in so far as the United States are concerned, we would urge upon our Canadian friends the importance of their being well represented also. The Marine conference will only have partially fulfilled its duties if any doubtful points of an international character are left to cause disagreements, and litigation in the future on the chain of lakes. The revised rules of the road, fog signals, and the maritime or admiralty law, should be indorsed, or the lines of diversion made thoroughly clear.

THE Use of Oil to Still the Waves, is the title of an article in the next number of The Century, by Lieutenant Beshler, U. S. N. It appears on the eve of assembling of the International Marine Conference, when this and other plans to protect life at sea will be discussed. The article is intended to show the necessity of international regulation requiring all vessels to carry oil, and the necessary apparatus for use at sea.

OFF FOR WASHINGTON.

The Erie railway have now on sale tickets to Washington and return for the coming inaugural at the rate of $11. All who contemplate going to Washington on this occasion, will find it to their advantage to try the Erie, the short and popular line. Three trains daily from Erie passenger station, South Water street. Tickets on sale until, and including March third; returning limit March eighth. For time cards, sleeping car space, etc., call at the ticket office, 141 Superior street.

ONTARIO INLAND MARINE MUTUAL INSURANCE COMPANY.

To the Editor of the Marine Record.

We have been favored with a first draft of the Ontario Inland Marine Mutual insurance association bill, which is now before the Provinci l legislature. It would be premature to comment upon a matter which is only in an embryo stage, but we shall do so when fuller details are before us. Meanwhile, we are pleased to observe that the names appended to the bill are those of the most esteemed canadian vessel owners, who are all favorably known to those of our people who have had dealings with them. We think we may predict that this association, starting under such favorable circumstances will receive a considerable share of appreciation and support from our owners, to whom it will be as great an advantage as it will be to our neighbors.

A Bill.—An act to incorporate the Ontario Inland Marine Mutual Insurance Association.

Whereas, William Hall, James Thorold Matthews, Samuel Crangle, Solomon Sylvester, all of the city of Toronto, vessel owners; and John Foy, of the same place, manager of the Niagara Navigation Company, have, by their petition prayed that a company may be incorporated under the name of the "Ontario Inland Marine Mutual Insurance Association," for the purpose of carrying on the busines of insurance of vessels and freights against loss, damage, or injury by fire, collision, explosion, and all or any of the perils of the sea or other cause of injury or loss, and of re-insuring vessels and freights insured by any other company; and whereas it is expedient to grant the prayer of the said petiton:

Therefore, Her Majesty, by and with the advice and consent of the legislative assembly of the Province of Ontario, enacts as follows:

1—William Hall, James Thorold Matthews, Samuel Crangle, Solomon Sylvester and John Foy, having signified their intention to comply with the requirements of this act, and such other persons as are now or hereafter shall become members of the said association shall be and are hereby created, constituted, and declared to be a body corporate and politic in law and fact, by the name of the Ontario Inland Marine Mutual Insurance Association, for the purpose of carrying on the business of insurance of vessels and freights, and all things appertaining thereto, or connected therewith in the Province of Ontario, and adjacent lakes, including Lake Michigan, and all their canals and rivers as far as the harbor of Quebec, inclusive.

2—The business of the said association shall be transacted at the city of Toronto, and carried on by a board of directors, who shall at the time of their election hereinafter provided for, be members of the association, and William Hall, James Thorold Matthews, Samuel Crangle, Solomon Sylvester, John Foy, and Archibald Campbell of the town of Colborne, shall constitute the board of directors from the passing of this act, until noon of the 1st day of April, 1890, and shall have and exercise all the powers hereinafter delegated to the board of directors of the association, and shall have special power to defray the preliminary and provisional expense of the incorporation and organization of the association.

3—The board of directors shall consist of not more than twelve, nor less than four, and they shall be elected at the annual general meeting of the members thereof, or at a special meeting called for the purpose, and each director shall be a member of the association, and shall insure and continue to insure to the amount of not less than $5,000 in the association.

4—The directors shall elect the president and vice-president of the association from among their members, who shall hold office for the year for which they are elected.

5—The aforesaid directors shall have power to classify risks, fix rates of premiums and assessments for each class of description of interet insured, to regulate the terms of payment thereof, which shall be by the manager's drafts on the several member; to settle losses, claims, and contingent expenses: to enact by-laws to regulate the internal management of the business of the association, including the form of policy, and they shall enact the same before the first day of April, 1889, and when so enacted, the said by-laws shall form part of the policy issued to each member, and shall remain in force until altered by the members of the association at an annual meeting thereof or a special meeting; there shall be an ordinary business meeting of the directors held monthly at the call of the president or any three of the directors, and at such meeting any three shall constitute a quorum for the transaction of business.

6—There shall be an annual meeting of the members of the association during the first week of March in each year, due notice of which shall be sent by the manager by post to each member; but a special meeting of the members may at any time be convened by three directors, or by any ten members in good standing, at not less than seven day's notice, for such purpose as may be found necessary in special matters relating to the business of the association.

7—As soon as convenient after each aforesaid annual meeting, the secratary shall call a meeting of the board of directors for the election of the president and vice-president from among themselves, and for the appointment of secretary and manager.

8—The members of the association shall only be liable .or the debts, contracts, and torts of the association, which shall have arisen during any year ending on the 1st of April, in which they shall have been members: such liability to be in proportion to the amount insured by each; and no member shall in any case be liable to contribute in respect of any one year's claims more than the amount of his insured interest.

9—Unless accompanied by a guarantee to the satisfaction of the directors for all premiums, calls, and liabilities in respect thereof, no insurance shall be of any effect if made on any interest which is mortgaged or assigned either wholly or in part; and in the event of any insured interest, or part thereof, being mortgaged or assigned, the insurance thereon shall cease unless the premiums, calls and liabilities due, or to become due thereon be guaranteed as aforesaid, but the insured shall continue liable for any premiums and claims as if he were still insured.

* * * * * * *

11—So far as regards any government deposit, the association shall be on the same footing as a mutual fire insurance company insuring only farm buildings and isolated risks.

12—The manager of the association shall not be subject to the penalties provided for in section 56 of the Ontario Insurance Act, in respect of any insurance he may effect or cause to be effected for any member of the association.

13—Sections 20 to 23 inclusive, 53 to 63 inclusive, 99 to 105 inclusive, 138 to 155 inclusive, of the Ontario Insurance Act, shall form part of this act except where the provisions of this act are inconsistant therewith. EQUITY.

THE STEAM HAMMER.

The steam hammer is one of the most useful engines known to modern mechanics, and it now seems impossible to get along without it. This wonderful machine is the invention of James Naesmyth. It is said it can chip an egg resting on an anvil without breaking it, while is can also deliver a twelve-ton blow which will make a whole township tremble. We can not do better than quote Naesmyth's own description of this crowning triumph of his life.

"It consisted of, first, a massive anvil on which to rest the work; second, a block of iron constituting the hammer or blow-giving portion, and third, an inverted steam cylinder, to whose piston-rod the hammer-block was attached. All that was then required to produce a most effect ve hammer was simply to admit steam of sufficient pressure into the cylinder so as to act on the under side of the piston, and thus raise the hammer block attached to the end of the piston rod. By a very simple arrangement of a slide valve under the control of an attendant, the steam was allowed to escape, and thus permit the massive block of iron to rapidly descend by its own gravity upon the work then on the anvil. Thus, by a more or less rapid manner in which the attendant allows the steam to enter or escape from the cylinder, any required number or intensity of blows could be delivered."

One of the first uses to which the steam hammer was put was that of the driving of piles. There were many mechanics who did not believe that it would drive piles faster or better than was done by the old method. So Naesmyth resolved to have a match, between his steam hammer and the ordinary pile-driver. Two immense logs were selected, and the two machines began to work at the same moment. The result was that while it took the old fashioned machine twelve hours to drive its log to the proper depth, the steam hammer had finished its task in four and a half minutes.

The invention of the steam hammer not only made Naesmyth famous wherever in the world the mechanic arts are practiced, but added largely to his worldly wealth. He was only 30 years of age, and had already achieved a great life work.

WRECKING COURTESIES.

Reciprocal wrecking priviliges, as embodied in Hon Mr. Kirkpatrick's bill, formed the chief topic in the house this afternoon. The promoter of the measure urged that for humanitarian and business reasons Parliament should remove the existing restrictions on American owners of wrecking plant, and a considerable majority of the members; irrespective of party, favored this plea. Mr. Patterson, of Essex, has another bill before the house, in which there is the additional clause that the Americans shall only be allowed to use their wrecking plant in Canadian waters on granting reciprocity in towing and the coasting trade. In the end it was resolved to refer both measures to a select committee. The difficulty which Mr. Patterson has to meet is the competition that will arise in the Detroit river, where rival owners of plant are so near each other, a consideration which Mr. Kirkpatrick's constituents do not feel.

OBITUARY.

In remembrance of Andrew Burns, who died February 11th, 1889, at Marine City, Mich.

A brother from us has gone,
A voice we loved is stilled,
His place is vacant in our circle
Which never can be filled.

His useful life has ended,
His gentle spirit's flown
To dwell in peace forever
In his bright, celestial home.

Our little circle now is broken,
Since our brother has fled;
We laid Brother Burns cold and lonely
Amid the peaceful sleeping dead.

Yet, again we hope to meet him
When our day of life is done,
And in Heaven with joy to greet him,
When he a crown has won.

MRS. ALONZO SMITH.

All old subscribers are kindly invited to remit arrearages, and readers not subscribers will be made welcome to our list.

AROUND THE LAKES.

[CONTINUED FROM PAGE 1.]

BUFFALO, N. Y.

At the Lake Erie boiler works, lots of work has been done during the last three months. In November they built six Scotch boilers, each 11 feet diameter, 12 feet long, for 150 pounds steam. One Scotch boiler 12 feet diameter, 12½ feet long, for 125 pounds steam. In December six Scotch boilers each 12 feet diameter, 11 feet long, for 160 pounds steam. In January, one rectangular fire box boiler 7½ feet diameter, 13 feet long, for 150 pounds steam. One rectangular fire box boiler 8½ feet diameter, 13 feet long, for 125 pounds steam. Two Scotch boilers 12 feet diameter, 11 feet long for 160 pounds steam. Two Scotch boilers 10½ feet diameter, 14 feet long, for 150 pounds steam. One Scotch boiler 12 feet diamater, 12½ feet long, for 125 pounds steam. The flanging, riveting, drilling, hoisting and handling of these boilers was all done by hydraulic machinery after the plates were formed in place. This firm claims to have the best equipped plant in the United States for building boilers, and have received orders from all sections of the country, and there is no doubt but that they can build as good and perfect a boiler as can be built in this or any other country.

At David Bells, the steel tug building for C. F. Dunbar of Buffalo, for use on Lake Superior, is getting well forward. All the frames are up, and the plating is nearly all on. Her dimensions are as follows: length over all, 60 feet, beam 14 feet, depth of hold 8 feet. She will have a high pressure engine 15 by 16, and steel boiler 9 feet 6 inches long, 5 feet 6 inches diameter. D. Bell is also building for C. F. Dunbar a steel steam launch 32 feet over all, 7 feet beam, 3 feet hold, and a high pressure engine 6 by 6, and water tube boiler under a new plan, 4 feet by 3 feet. He is also building an engine and boiler for a new wooden tug. The tug is 76 feet long, 15½ feet beam, 10 feet hold. The engine is high pressure, 18 by 2, and boiler 6 feet 8 inches diameter, 10 feet long. He is also building several new steel marine boilers.

Wm. Erskine, chief engineer of the Anchor Line steamship Susquehanna, will go to Erie about the 15th of March, to fit out her machinery.

W. D. Rosie, clerk of the steamer Sheboygan, of the Goodrich line, is in Buffalo, visiting the family of H. L. Chamberlin, agent for Ward's Lake Superior line.

C. H. McCutcheon, who has succeeded to the business of his father, the late Samuel McCutcheon, at 18 Ohio street, is making great improvements in his store by putting in a new front, and making many useful alterations. He is also putting in a new engine and boiler, and two of the latest improved pipe cutting machines in the workshops. Samuel McCutcheon, who died last October, was in this business in Buffalo 35 years, and was widely known and respected. C. H., his son, having been with him in the business for the last 15 years, is also well known, and has many friends who will, we hope, continue to patronize him in his business of copper and sheet iron work, and steamboat supplies. C. H., is building a new iron boiler house on the steamer Hiawatha, also considerable other marine work. We wish him every success.

The steamer Passaic is receiving considerable repairs to her hull, and a new water bottom to her boiler.

The ordnances governing the harbor in Buffalo have recently been amended requiring steam vessels to run at a speed not to exceed 2½ miles per hour, from abreast of the outer end of the north pier to Ohio street swing bridge. It having extended formerly from the entrance of the Blackwell canal, opposite the Bennett elevator. Masters, who in making the harbor the coming season, must not attempt to show off the fine points of their racers by running at a high rate of speed or they may be obliged to pay for the indulgence.

The above new ordnance will no doubt be of great advantage to the Lackawanna company who have utilized the north pier for a coal dock. It will probably compel many steam vessels to hire a tug or tugs which they formerly had no use for, which will help the tug lines. It is a great shame that large corporations should be allowed to put vessel owners and masters to unnecessary expense and trouble, and also to spoil the entrance to Buffalo harbor.

When I mentioned two weeks ago that Captain R. Cowley, was here getting the fine steamship Roumania put in order, I was not aware that James Corrigan had sold the Roumania to H. J. Webb, W. C. Richardson, Chris Grover, M. Bradley and others, and that Captain Cowley was also part owner of her. She is a very fine steamship and we wish her and her owners lots of good luck. WILLIAMS.

CHICAGO, ILL.

John A. Connelly has been appointed to the steamer Thomas R, Scott, hailing from this city. The Thomas R, Scott was built in Grand Haven by Robertson in 1887, and her net tonnage is 213.

ERIE, PA.

Special to the Marine Record.

W. L. Scott & Co.'s soft coal docks at Erie have been raised about two feet and the slips on both sides are being drilled, and blasted by dynamite, which will give them a depth of 17 feet instead of 15, which will enable the largest vessels to load 2,500 tons per day by the aid of McMyler's improved machinery.

At the Philadelphia and Erie docks three of McMyler's machines are being erected to unload iron ore at the rate of 1,500 tons per day. Iron ore has never been handled at these docks before.

The Pittsburg docks will have their capacity considerably increased for the handling of iron ore. Large tressel works are being erected and the water is being deepened to seventeen feet.

The government contract for building the jetties outside the harbor, to protect the peninsula, will be gotten on with as soon as the ice goes away. Mr. Friday is the contractor and he is building two large scows to carry material; also two pile drivers, and expects to complete the contract during the coming season.

Captain C. H. Wilson, formerly of the Anchor Line, left Erie on Monday for West Bay City to look after a new steamship which he will command next season. The steamship is being built at F. W. Wheeler's shipyard, for Messrs. McBrier, Carter and Struber, of Erie. She will receive the name "Fedora" and it is reported that Fanny Davenport will present her with a splendid flag.

WILLIAMS.

PORT HURON, MICH.

Special to the Marine Record.

The steamship Campana will run with the Northwestern Transportation Co.'s steamers, the United Empire and Ontario, between Sarina and Duluth James Betty has made the following appointments: United Empire, Captain Robinson; Campana, Captain McMann; Ontario, Captain McDougall.

Captain H. N. Jex is rebuilding his steambarge, the Laketon, into a first class wrecker, at Hayne's yard.

James Myers, of Elphicke & Myers, vessel brokers, has returned home to Chicago.

W. B. Morley, the ship builder of Marine City, was in this city Wednesday on business.

James Bowers, the well known foreman for Dunford & Alverson's dry dock, fell into the hold of the schooner D. P. Dobbins, Tuesday noon, and striking upon his head died from the injuries which he received, a few hours later. Mr. Bowers was well liked by his fellow workmen, and Dunford & Alverson loose a trusted friend and a first class workman. The deceased was 51 years of age and leaves a wife, three children, and an aged mother. Both the drydocks shut down to attend the funeral. It was the largest funeral held in this city for years.

The tug George R. Hand, of Lynn's line, and the schooner D. P. Dobbins, came out of Dunford & Alverson's dry dock Monday. They are both in first class shape.

Captain Walker, of the car ferry Huron, has resigned, on account of poor health.

The tug Porter, and barge Ida Corning, take the Dobbins and Hand place in Dunford & Alverson dry dock. They will both receive a large amount of repairs.

The Port Huron transportation company have made the following appointments for the season of 1889: Steamship Gogabec, Wm. Neil; the new steambarge Pawnee, Captain Al Neil, sr.; Nelson Mills, Captain John Sims.

Thomas Harbottel, of last season Dean Richmond, will go first mate on the Gogbec.

The work on the ferry Domer is about completed.

Captain Hugh Stevenson is in this city visiting his friends.

Captain Lon Cox is building two new tenement houses on Beers street.

Fitsgerald's dry dock iron works are overhauling the steamer Colorado, Manistque, Mary, and tug sweepstakes.

MILWAUKEE, WIS.

Special to the Marine Record.

The marine business is beginning to look up and assume a much brighter appearance, although the prospects do not indicate a better rate of freight than last season.

The new syndicate boat, building at the Milwaukee ship yard company is being pushed forward to completion as fast as possible. Her machinery arrived last week and is now being placed in position.

The steamer Pridgeon has about completed repairs, also the steamers Moonlight, Porter and Burton. The schooner Merrill is now on the floating dock to receive a general overhauling at the Milwaukee shipyard company.

At Wolf & Davidson's the propellor Progress is nearly ready to have the dock, and is now considered as staunch as anything afloat.

The schooner Tremble has finished repairing, as also the steamer Holland and tug T. Emery. The tug Emery, in addition to a general overhauling, has received a new Blake, Ind., air pump and condenser.

Engineer C. H. Wilcox, has been appointed chief of the steamer F. & P. M., No 2, vice Mr. Bassett, who takes a similar position on the steamer G. H. Dyer.

The tug Starke Bros., has been sold to Messrs. Neibolt, Walters & Co., Sheboygan, and after receiving some repairs will engage in towing at that port.

The Milwaukee tug boat line will have new machinery built for their new tug instead of using the Stark Bros.' old engine.

Chief engineer Porter, of the steamer J. H. Schrigley, arrived in town last week to look after the repairs to her machinery.

J.

AMENDED STEAMBOAT RULES AND REGULATIONS.

TREASURY DEPARTMENT,
OFFICE OF SUPERVISING INSPECTOR-GENERAL OF STEAM-VESSELS.
WASHINGTON, D. C., February 12, '89.

At the regular annual meeting of the board of supervising inspectors of steam vessels, held in rooms 5 and 13 Corcoran building, Washington, D. C., January and February, 1889, in pursuance of section 4405, Revised Statutes of the United States, amended were made to rule 1, sections, 3, 4 (first clause of first paragraph repealed), and 6. Sections 7 and 9 repealed, substiintes therefor being embodied in amended section 3; sections 8 and 10 were renumbered 7 and 8, respectively; rule II, sections 1, 6, 7, 10 and 34; rule III, section 18; rule V, sections 5 and 15. These amendments having received the approval of the secretary of the treasury, dated February 11, 1889, have now the force of law, as provided in section 4405, Revised Statutes, and must be observed accordingly.

* * * * * *

Following is the full text of the various sections of rules as amended, the parts that have been stricken out inclosed in parentheses (thus).

RULE I.

SECTION 3. (To ascertain the tensile strength of plates, a piece shall be taken from each sheet to be tested, the area of which shall equal one-quarter of one square inch on all plate 5-16 inch thick and under; and all plate (over) 5-16 inch thick and under ¾ inch thick the area shall equal ¾ (the square) of its thickness; and all plate over ¾ inch thick the area shall equal ½ (the square) of its thickness, and the force at which the piece can be parted in the direction of the fiber or grain, represented in pounds avoirdupois—the former multiplied by four, the latter in proportion to the ratio of its area—shall be deemed the tensile strength per square inch of the plate from which the sample was taken; and should the tensile strength ascertained by the test equal that marked on the plates from which the test pieces were taken, the plates must be allowed to be used in the construction of marine boilers:) Provided always, That the plates possess homogeneousness, toughness, and ability to withstand the effect of repeated heating and cooling; (but should these tests prove the plate to be overstamped, the lots from which the tests plates were taken must be rejected as failing to have the strength stamped thereon. But nothing herein shall be so constructed as to prevent the manufacturers from restamping such plates at the lowest tensile strength indicated by the samples, provided such restamping is done previous to the use of the plates in the manufacture of marine boilers.) To ascertain the tensile strength and other qualities of material, there shall be taken from each sheet to be used in shell or other parts of boiler, which are subject to tensile strain, a test piece prepared in form: Ten inches in length, two inches in width, cut out in the center one inch.

All sample pieces of steel or iron plate 5-16 inch thich and under shall be one inch wide at reduced section; plate over 5-16 thick shall be reduced in width at center to an aggregate are approximating 4 10 of one square inch, but such reduced area shall, in no case, exceed forty-five nor be less than thirty-five one-hundredths of an inch, and the force at which the piece can be parted in the direction of the fiber or grain (when of iron) represented in pounds avoirdupois, in proportion to the ratio of its area, shall be deemed the tensile strength per square inch of the plate from which the sample was taken; and should the tensile strength ascertained by the test equal that marked on the plates from which the test pieces were taken, the plates must be allowed to be used in the construction of marine boilers: Provided always, That the plate possess homogeneousness, toughness, and ability to withstand the effect of repeated heating and cooling; but should these tests prove any plate to be overstamped, such plate must be rejected as failing to have the strength stamped thereon. But nothing herein shall be so construed as to prevent the manufacturer from restamping such plate, and all other plates in the lot, at the lowest tensile strength indicated by the deficient sample, provided such restamping is done previous to the use of the plates in the manufacture of marine boilers. When more than one sample shall be tested from one sheet, the sample showing the lowest tensile strength shall be allowed as the tensile strength of the plate.

SECTION 4. (Local inspectors are required to make and send to the supervising inspectors, with every sample of iron or steel to be tested, their certificate that the sample sent for testing was cut from the plate or plates to be used in boiler designated. And) The manufacturer of any boiler to be used for marine purposes shall furnish the inspectors an affidavit in the following form, subscribed to, either by himself or authorized agent having superintendance of the construction of such boilers.

SECTION 6. To ascertain the ductility and other lawful qualities, iron of 45,000 pounds tensile strength, and under, shall show a contraction of area of 15 per cent., and each additional 1,000 pounds tensile strength shall show one per cent. additional contraction of area, up to and including 45,000 T. S. Iron of 55,000 T. S. and upwards, showing twenty-five per cent. reduction of area, shall be deemed to have the lawful ductility. All steel plate of one-half inch thickness and under shall show a contraction of area of not less than fifty per cent. Steel plate over one-half inch in thickness, up to three quarters inch in thickness, shall show a reduction of not less than forty-five per cent. All steel plate over three-fourths inch thickness shall show a reduction of not less than forty per cent: Provided, however, That steel plate required for repairs to boilers built ppevious to April 1, 1886, may be used for such repairs when showing a contraction of area of not less than forty per cent.

SECTION 8. (8.) The gauge to be employed by inspectors to determine the thickness of boiler plates, and the widths in the table, will be any standard American gauge furnished by the treasury department.

(9. All samples intended to be tested on the Riehle, Fairbanks, Olsen, or other reliable testing machine, must be prepared in form, as follows, viz: Eight inches in length, two inches in width, cut out at their centers one inch.

SECTION 8. (10.) All tests made of boiler material must be recorded upon a table as follows: Tensile tests of samples of material intended to be employed in the construction of boilers of steam vessels made on——— testing machine: Dates when tests were made: From whom samples were obtained, and by whom tested: Material, iron or steel: Stamp or label on samples, which must be the same as stamps on the material from which they are taken: Thickness of samples, expressed in hundredths of an inch: Width of samples, expressed in hundredths of an inch: Strain at which each sample parted: Strain per square inch of section: Reduced thickness: Reduced width: Contraction of area—per cent.: Remarks.

RULE II.

(1) Pressure allowable on boilers of various dimensions built prior to February 28, 1872.

SECTION 1. Boilers built prior to February 28, 1872, shall be deemed to have a tensile strength of 50,000 pounds to the sectional square inch, whether stamped or not, and shall be tested under the rule prescribed for boilers inspected under the provisions of section 36 of the act relating to boilers built after the 28th of February, 1872. Any boiler having been in use ten years or more, shall, at each annual inspection thereafter, be drilled at points near the water-line, and at bottom of shell of boiler, or such other points as the local inspectors may direct to determine thickness of such material at those points, and the general conditions of such boiler or boilers at the time of such inspection, and the thickness of said material shall be determined thereafter at each annual inspection, and the steam pressure allowed shall be governed by such ascertained thickness and general condition of the boiler.

6. No braces or stays hereafter employed in the construction of boilers shall be allowed a greater strain than six thousand pounds per square inch of section, and no screw stay-bolt shall be allowed to be used in the construction of marine boilers in which salt water is used to generate steam, unless said screw stay-bolt is protected by a socket. But such screw stay-bolts without socket may be used in staying the fire-boxes and furnaces of such boiler, and not elsewhere, when fresh water is used for generating steam in said boilers, water used from a surface condenser shall be deemed fresh water, and no brace or stay-bolt used in a marine boiler will be allowed to be placed more than (8½ inches from center to center, except that flat surfaces other than those on fire-boxes, furnaces, and back-connections, may be re-inforced by a washer or T-iron of such size and thickness as would not leave such flat surface unsupported at a greater distance in any case than 8½ inches,) 10½ inches from center to center on fire-boxes, furnaces and back connections: nor on these than at a greater distance than will be determined by the following formulas.

The working pressure allowed on flat surfaces fitted with screw stay-bolts and nuts, or plain bolt with single nut and socket, or riveted head and socket, will be determined by the following rule:

When plates 7-16 inch thick and under are used in the construction of marine boilers, using 112 as a constant, multiply this by the square of the thickness of plate in sixteenths of an inch. Divide this product by the square of the pitch or distance from center to center of stay-bolt.

SECTION 7. Plates of iron or steel, used in the construction of boilers, extending beyond the cylindrical shell to the front of the boiler over the furnaces, shall extend at least 12 inches below the center of the shell, and shall not be of less tensile strength or thickness than the adjoining sheets in the cylindrical portions of the shell, and that the sheets forming the shell shall be rolled to form of shell with the grain of the material.

SECTION 34, (paragraph 3.) On all boilers hereafter built a bronze or brass stop-cock or valve shall be placed between check-valve and boiler on all feed-pipes, in order to facilitate access to connection.

NO. II.—SUSPENSION AND REVOCATION OF LICENSES.

(1. The inspectors shall furnish the accused with a copy of the charges, setting forth specifically the character of the charges and the section of the statutes or rules of the board that had been violated.)

(1. Subpœnas for witnesses shall be in the prescribed form, three copies of which shall be furnished each withess.

SECTION 1. The inspectors shall, when charges have been duly filed against a licensed officer of steam vessels, furnish the accused with a copy thereof, setting forth specifically their character, and the section of the statute or the rules of the board that have been violated.

SECTION 2. Subpœnas shall be in the prescribed form, one copy of which shall be furnished each witness.

LAKE CARRIERS' ASSOCIATION

TO CONSIDER AND TAKE ACTION UPON ALL GENERAL QUESTIONS RELATING TO THE NAVIGATION AND CARRYING BUSINESS OF THE GREAT LAKES AND THE WATERS TRIBUTARY THERETO, WITH THE INTENT TO IMPROVE THE CHARACTER OF THE SERVICE RENDERED TO THE PUBLIC TO PROTECT THE COMMON INTEREST OF LAKE CARRIERS AND PROMOTE THEIR GENERAL WELFARE.

BOARD OF MANAGERS, 1888.

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MARINE RECORD—OFFICAL PAPER.

LAKE CARRIERS ASSOCIATION.

The Lake Carriers' Association met in one of the committee rooms of the Merchants' Exchange Friday afternoon. President S. D. Caldwell presided.

The resignation of Captain Millen of Detroit as a member of the board of managers was received and accepted. The vacancy will be filled at the next meeting.

A letter was received from Henry Collins of Detroit, who proposes to build a tunnel under the Detroit river for $1,000,000. He says he will contract with any responsible corporation to build a tunnel for the sum named, furnishing all the material required, and that he can give ample security.

Mr. Francis McLennan of Montreal, sent a letter to the association stating that there are now two wrecking bills before the Canadian Parliament. A bill called the Patterson bill was introduced apparently for the purpose of killing the Kirkpatrick bill, which is favored by American shippers.

There was a discussion regarding grain shortages at Duluth, but no action was taken.

WEIGHMASTERS' REPORT.

The following report is from Norton, Drewery & Keller, general weighmasters, No. 11 Main street, Buffalo, N. Y. Report for season of 1888:

Weighed from.	Total bushels	Short bushels	Over-run bushels.	Shortages got back bushels.	Surplus bushels.	Short bushels
Chicago	15,549,619	3,406	5,491	1,148	1,148	.....
Duluth	812,186	429	106	.....	.....	323
Detroit	630,068	158	292	.....	134	.....
Milwaukee	412,063	130	8	.....	.....	122
Toledo	1,102,369	373	274	.....	.....	99
Sandusky	911,497	555	103	100	.....	352
Green Bay	40,000	.....	.....	.....	.....	.....
Port Huron	45,379	259	.....	169	.....	90
Total	19,503,181	5,310	6,277	1,417	1,282	986

Net surplus, 2,384. Nearly 7 pounds to the thousand.

GUIDE TO WASHINGTON.

We are in receipt of a "Guide to Washington" from the Erie railway, giving the principal points of interest, hotels, and other features. The Erie railway being the shortest line to Washington via the B. & O. railway, this guide will benefit those contemplating going to the inaugeral by this line. Call for guide, when burchasing ticket to Washington, at 141 Superior street, railway office.

Shippers are said to be offering $1.25 freely for ore from Ashland and Two Harbors, with no takers. Vessel men are holding off for $1.50. Whether they get it or not will depend largely on the amount of wheat at Duluth on the opening of navigation.

DIXON'S
GRAPHITE
PIPE JOINT GREASE
FOR STEAM OR GAS PIPES
makes a perfect joint that can be opened with ease in three years or thirty years. Bolts, screws, etc., smeared with this grease will not rust even in the dampest places. Write to Jos, Dixon Crucible Co Jersey City, N. J., for circulars.

CONTINUED FROM SECOND PAGE].

Later on, he makes friends with the moulder, by riddling his sand for him or by clay-washing his "gagers," and he thus gets some insight into the art of filling and ramming sand in a flask. At noon-time he gets a little flask in the corner, and tries to make a mould of some fancy piece of ironmongery. In my time, the favorite pattern, the "piece de resistance," was a flat-iron holder; it took bu little iron to make, had an ornamental lookt and was easily carried home as a trophy.

Here he works away by himself, copying as he thinks, all the operations of the moulder, and when the flasks are being poured off, he importunes his friend the moulder to pour his flask also, which he does, with a quiet smile, the meaning whereof was at the time unknown. Our embryo moulder and engineer can scarcely wait for the gate to solidify, so impatient is he to see the result of his labor; but, when he lifts off the cope, he finds beneath the mould all right, but no iron in it—he had forgotten to cut a runner from the gate to the mould, by which to let the iron flow into it. His friend the moulder well knew that he had neglected to do so, but he thought the best way to have him remember to do it afterward was to let him make a failure of his first attempt.

It may seem a strange thing that a boy, wishing to be a machinist and an engineer, hould begin in the foundry, but so it was in the "chalk age" of which I speak. After working about the foundry until he could mould grate bars, sleigh shoes, and plow poiuts, and until another boy had come to take his place in cleaning castings, he was promoted to striking in the blacksmith shop.

Of the misfortunes that befell him there while learning the art of working wrought iron, I could fill far more time than is now at my disposal.

As you will never again see the old time apprentice boy who wanted to be a mechanical engineer, so no more will you ever see the old time smith shop, in which he passed a considerable portion of his time, and through which he traveled on this, as he then thought, by no means royal road to learning.

No swiftly revolving fan made "music in the air" in that shop; but instead, a wheezing bellows, whose wrinkled, leathern sides puffed out and shrunk in with every stroke of the bellows pole, gave breath to the flame upon the hearth. When extra heavy heat was to be made, or a weld taken, a heavy stone was laid upon its floating top, which added fierceness to the blast, and labor to the sweating youth at the pole. The art with which the skilled smith heaps high the coals above the tuyere, sprinkling their outer surface with water in order to make beneath it a hollow fire whose blazing roof should reflect down on to the iron beneath the inclosed heat, should be seen, not told.

His watchful eye peers into each crevice, to see to it that the heat is made uniform, and that no burning of exposed edges takes place. Now and then he dashes in a little clean sand to make a flux that shall protect from oxidization its more exposed parts.

Ranged in front of the anvil are the three or four extra strikers called in for the occasion; and who, with upraised sledges poised in the air, await the coming heat. Now from out the roaring fire the white hot iron comes, dripping with melted slag, and about which there gleams up a halo of fiery scintillations that light up the dingy shop with an unwonted cheerfulness. "Now," cries the smith, and the leading sledge falls on the plastic iron, followed one after another by the others, until under the tuneful measure of their falling strokes the yielding metal is slowly and steadily beaten into forms of usefulness and beauty.

Here, as in the foundry, our hero is adding to his stock of useful information. Watching his opportunity, he tries his skill in shaping a piece of iron, and with the usual experience of all who first essay that apparently simple operation, he finds that every time he lays the heated iron upon the anvil, and hits it with the hammer, it somehow twists from out the tongs, flies past his head, and lands across the shop. Yet every time he starts out to hunt up that lively iron, there comes to him an idea that perhaps he had failed to hold it level on the anvil, until, with frequent dodging and frequent chasing, he finds that the apparently easy thing of holding a piece of iron in a pair of tongs while pounding it is an art. Soon he learns how to heat and shape a steel cold chisel, and much delight it is, when finished, to heat and dip it in the water, rub it bright with a bit of sandstone, and watch with nervous anxiety the glowing colors of each varying temper, as they chase each other toward their vanishing point. If in his haste he plunges the steel back into the water too soon, and leaves it so hard that it breaks, or if he neglects the cooling too long, and his chisel is made soft and worthless, with each failure there comes to him, and to remain with him, an education which practice alone can bring, and practice alone perfect.

The drawings furnished the smith in those days were of varied styles. Sometimes the object wanted was somewhat crudely drawn in the dirt floor of the shop, by the toe of the master's boot. If it was something very particular, it was chalked out on the back of the door, or on the top of the bellows, accompanied with a verbal description, aided by a thick thumb sliding up and down, a well worn rule.

Having glanced at some of the knowledge and experience that came to our hero through the foundry and smith shop, all of which he found of great value in after life, we must hasten on to the senior years of his study, which finally culminated in his graduation from the machine shop.

I have, in a hurried and imperfect manner, tried to describe the foundry and the smith shop of the "chalk age," but how shall I be able to bring to your view the machine shop of that gone-by period—a shop which I so well remember, but which you will never see? As I walk through the steam heated, electric lighted, frescoed and varnished machine shop of today, whose swept and garnished floor gives no hint of litter or of labor, I have to pause and close my eyes until memory brings back the picture of the low, dingy, ill-lighted worse heated, and scantily furnished machine shop of the "chalk age" and of my youth—shops then to be found all over the country, but gone now, and forgotten; shops in which the boys of long ago worked, and, unaided, wrestled with difficult problems, and from out of which there came some of the ablest thinkers as well as the most successful engineers of to-day. Were I speaking to the older members of a profession of which you are standing on the threshold, I could. I am sure, even with my imperfect description, recall to them memories of this gone-by, but not forgotten, epoch of their lives.

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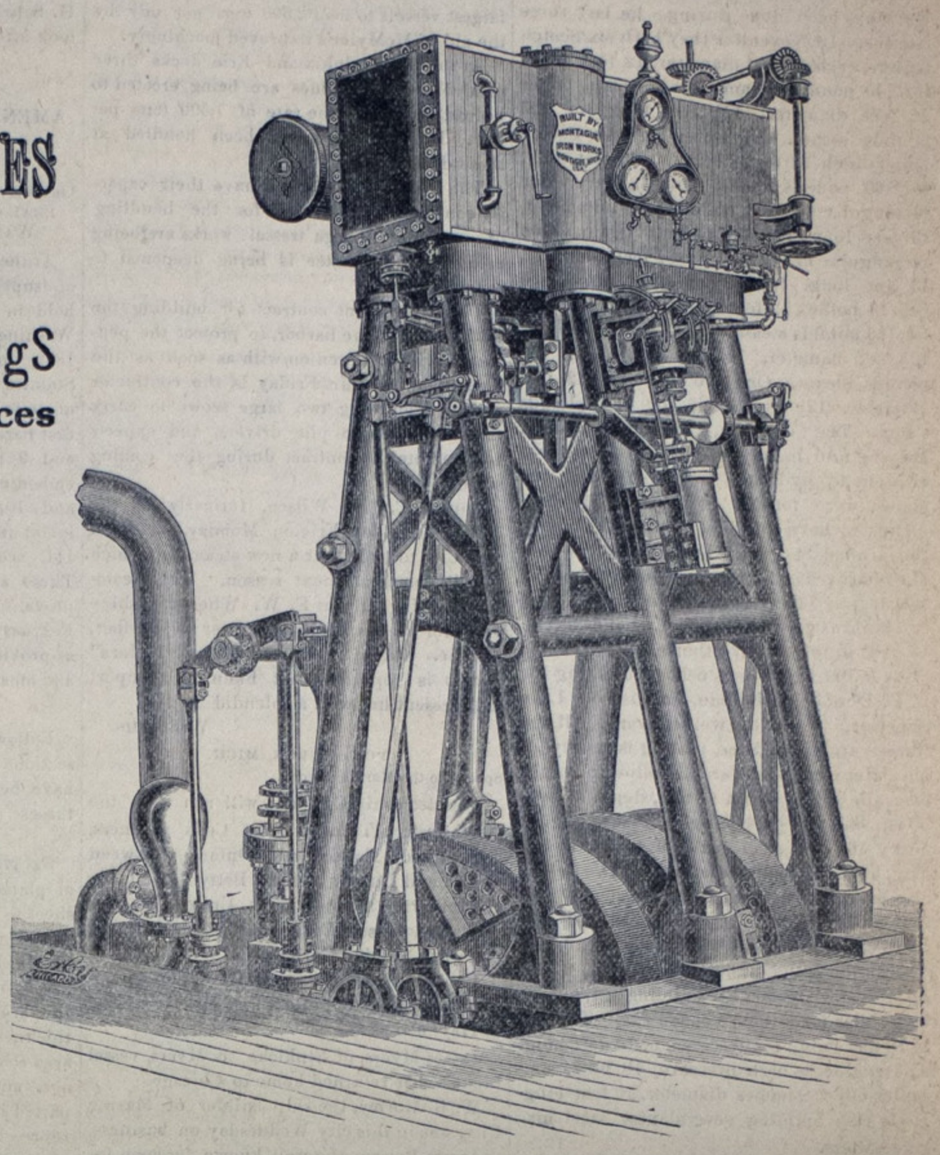

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THE TUG MYRTLE, of Sandusky, Ohio, for sale cheap. Is in first-class condition. For particulars write to FRED GROCH, Sandusky, O.

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TWO MARINE BOILERS 7 years old in good order for sale cheap, 9¾ feet shell by 16 feet long for $1,000 each, ½ down balance one year, by C. H. LANE, BUFFALO, N. Y.

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SCHOONER FRANC MINER. Her dimensions are as follows: 68 feet keel, 17 feet beam, 5 feet hold, she has two masts and is three years old, in good shape, outfit and all. I also have a complete outfit for a tug or barge, engine 18 by 20, boiler 6½ by 14, shaft wheel and all complete For particulars write to L. NAU, Green Bay, or CAPTAIN J. A. CUSICK, Fort Howard, Wis.

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Apply as above. January, 1889.

UNITED STATES ENGINEER OFFICE, Cleveland, O., Feb. 12, 1889.—Sealed separate proposals in duplicate, will be received at this office until 12 m., on Friday, March 15, 1889, and then opened, for dredging at the following harbors: At Monroe harbor, Mich.; at Toledo harbor, O.; at Port Clinton harbor, O.; at Sandusky harbor, O.; at Huron harbor, O.; at Black River harbor, O.; at Cleveland harbor, O.; at Fairport harbor, O.; at Ashtabula harbor, O. All information can be obtained at this office. The United States reserves the right to reject any or all proposals. Preferences will be given to materials and plant of domestic production or manufacture, conditions of quality and price (import duties included) being equal. The attention of bidders is invited to acts of Congress approved February 26, 1885, and February 23, 1887, vol. 23, page 332, and vol. 24, page 414, statutes at large. L. COOPER OVERMAN, Major of Engineers. feb 21-4

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BARGE COL. BRACKET—She carries 260M feet of lumber, 420 tons of coal. Had $990 worth of repairs last season. Fit out good. Price $1,600. Mention this paper. ED. J. KENDALL, Port Huron.

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17 feet long, 7 feet diameter, allowed 110 pounds of steam, 6 years old, in good condition; price $800.

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No. 68, New York Express		†10 50 p m
No. 68, Pittsburg Express		†10 50 p m
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No. 65, Fast New York Express		*12 50 p m
No. 61, Pittsburg Express		† 7 35 p m
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No. 65, Pittsburg Express		†12 50 p m
No. 63, New York Express		* 6 55 p m
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MARITIME LAW.

POSSESSION—MATERIAL MAN—LIEN—ACCOUNTS.

U. S. District Court, Southern Disirict of New York.

Two libels were filed against the tugboat B., the libel of the Park to recover possession of her, and the libel of Every to enforce payment of an amount alleged to be due for contract work on the vessel, Every being the assignee of the ship-wright, and the ship-wright having retained possession of the boat as agent for the assignee to secure the lien. The court, having discussed the merits of the repairs put upon the vessel, held, that the libellant Every, was entitled to a decree in his suit against the vessel for the sum of $1,578, without interest, and that the libellant Park was entitled to possession of the vessel on payment of that sum.

BROWN, J.

The first named libel was filed by the owner to recover possession of the tug Edgar Baxter, possession of which was refused on the ground that she was held under a ship-wright's lien for the expense of certain repairs made under contract, and for an additional sum for extra work.

The second libel was brought to enforce payment of the amount alleged to be due for the contract work and the extra work, the libellant having taken an assignment of the repair claim and lien, and the shipwright still retaining possession as agent for Mr. Every, the assignee.

The evidence shows a bona fide assignment of the shipwright's claim and lien, to obtain moneys to pay bills that the shipwright had ncurred in making the repairs. In this court it is considered competent for a ship-wright to transfer his lien along with his claim, and to enforce such a lien by a suit in admiralty for the sale of the vessel, or of the owner's interest in it, in order to satisfy the common law lien. The B. F. Woolsey, 7 Fed. Rep. 108, 116; the Two Marys, 10 do, 918, 925; Nash vs. Mosher, 19 Wend., 431; 3 Parsons on Contracts, 6th Ed., 244. 2 Kents Com., 639. Both libels were, therefore, properly filed.

It is unnecessary to specify the details of this embarrassing case. The written contract, however, is not strictly made out, because the owner, though he retained a copy signed by Mr. Allen, expressed his dissatisfaction with it at the time, and never signed it. There is no doubt, however, that it embodies in general the work to be done; and for the most part there is no dispute on the comparatively small points of difference. The writing cannot be held conclusive, because the owner said it was not correct or complete, and never signed it. So far as it goes, however, it shows at least Mr. Allen's understanding, and his claim for extra work can only be allowed upon being made out by a preponderance of evidence, either direct or circumstantial. Mr. Park denies emphatically that he ordered any extras whatsoever; and Mr. Allen's voluntary destruction of the letters, which were the main, as he claims, warrant for the alleged extra work, prevents me from giving him the benefit of such claims.

As the contract does not require the boat to be hauled to the dry dock, I allow the charges of $30 for this item, including towage, as well as the charge for copper paint, with three day's work in painting, making $23 additional.

The skag, or shoe, is a part of the boat necessary to its completion, and is, I think, embraced in the general works of the contract. The other items of the extra charges are not, I think, sufficiently made out as agrinst Mr. Park's testimony. This makes $53 allowed to Mr. Allen's credits as extras.

I do not think the evidence sustains the claim that the ceiling was put on as completely as required by the contract. In excusing the want of ceiling in certain portions, the burden is on Mr. Allen to show that by undoubted usage those portions were not ceiled. The evidence does not show this, at least to a considerable portion. Allowing for air space, I think the evidence still shows there must have been at least 150 feet of ceiling not put on, even allowing for some old ceiling that was good and allowed to stand, compensated for, as Mr. Allen alleges, by other work. I allow Mr. Park credit, therefore, for $75 for the ceiling not put in.

The contract price for the work being $1,800, and the time having expired during which the longest of the notes had to run, the libellant Every is entitled to the contract price less the sum of $200 paid and the difference in Mr. Park's favor in the above named items, making $1,578 now owing. Mr. Park not having made any tender, nor having demanded complete fulfilment, nor objected to Mr. Allen's offer to allow for anything defective that could be pointed out, Mr. Park was not entitled to possession of the boat without settlement and payment of what was due in cash and notes. Mr. Allen, on the other hand, exceeded his legal right in refusing to deliver except upon security, or indorsers, in addition to Park's notes.

The vessel having been detained by Mr. Allen for his own security, his bill of $90 for are of the boat, cannot be allowed; and as the owner has lost the use of the boat during the long period of nearly two years that this controversy has been pending, no interest during the same period can be allowed for the bill of work. The libellant Park is, therefore, entitled to possession of the vessel on payment of $1,578, without interest, and Every is entitled to a decree in his suit for the same sum, and the costs of the wu otss tmust be divided between the parties.

November 30, 1888.

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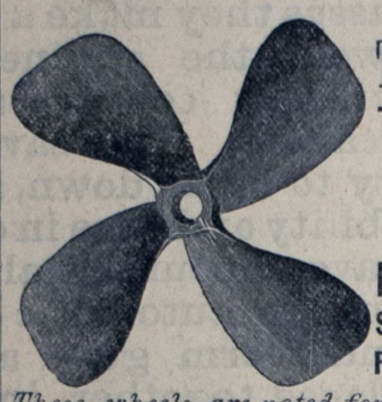

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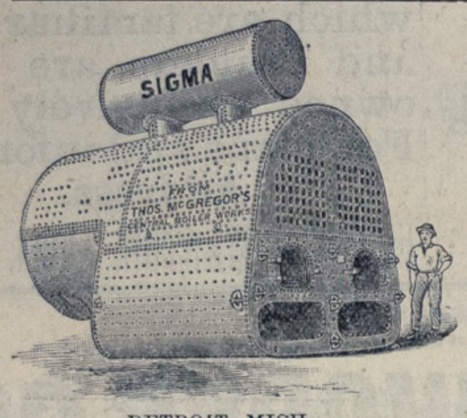

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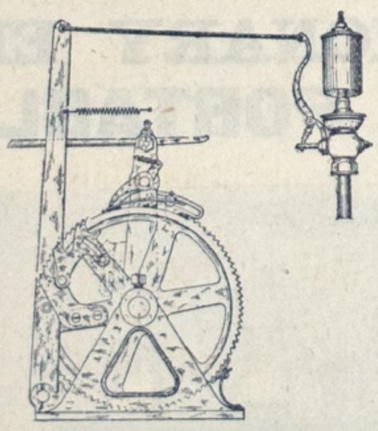

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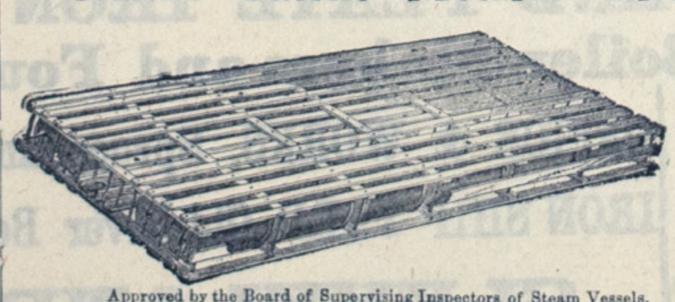

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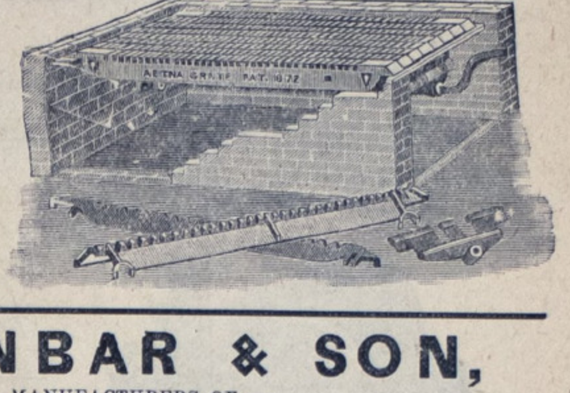

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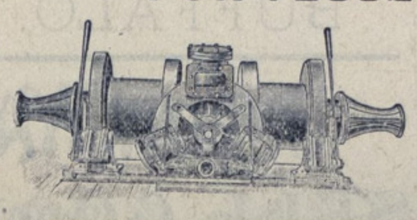

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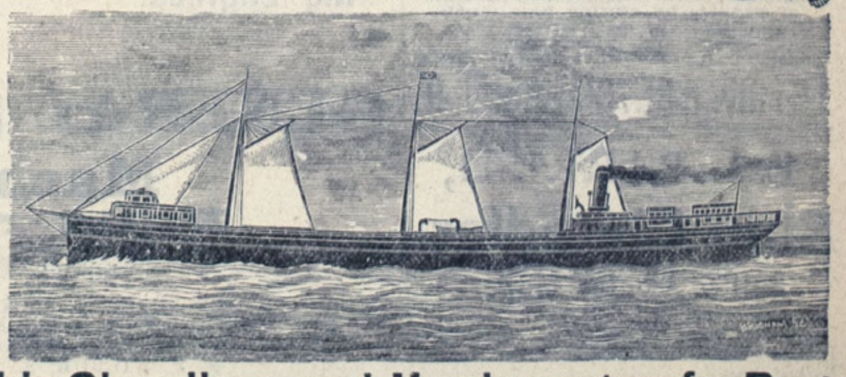

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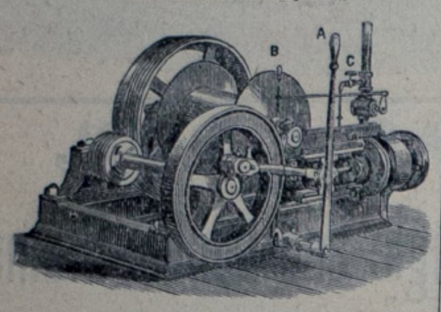

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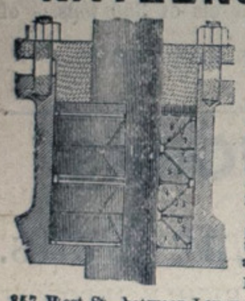

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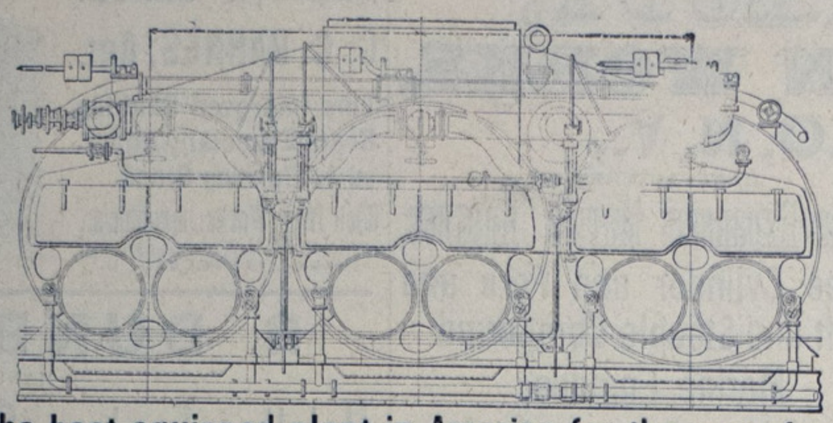

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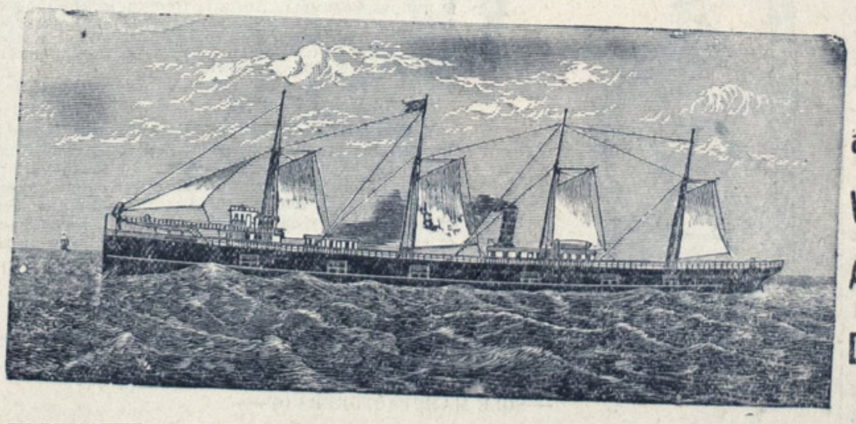

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